United States Environmental Protection Agency, Region III
Corrective Action Program

FINAL ADMINISTRATIVE RECORD

Former Rehrig International
901 North Lombardy Street
EPA ID NO. VAD 089 028 377
Richmond, VA 23220

March 18, 2009

Section 1

Statement of Basis

UNITED STATES

ENVIRONMENTAL PROTECTION AGENCY

REGION 3

STATEMENT OF BASIS

FORMER REHRIG INTERNATIONAL

RICHMOND, VIRGINIA

EPA ID NO. VAD 089 028 377

MARCH 18, 2009

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I. INTRODUCTION

A. Facility Name

The United States Environmental Protection Agency (EPA) has prepared this Statement of Basis (SB) for the Former Rehrig International Facility located at 901 North Lombardy Street, Richmond, VA 23220 (hereinafter referred to as the Facility).

The Facility is subject to the Corrective Action Program under the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (RCRA) of 1976, and the Hazardous and Solid Waste Amendments (HSWA) of 1984, 42 U.S.C. Sections 6901 to 6992k. The Corrective Action Program is designed to ensure that certain facilities subject to RCRA have investigated and cleaned up any releases of hazardous waste and waste constituents that have occurred at their property.

Information on the Corrective Action Program can be found by navigating http://www.epa.gov/reg3wcmd/correctiveaction.htm.

B. Proposed Decision

This SB explains EPA's proposed decision that Corrective Action is complete and no land use controls are required for the Facility. EPA's proposed decision is based on a review of EPA and Virginia Department of Environmental Quality (VDEQ) files regarding the environmental history of the Facility as presented in the Final RCRA Site Visit Report submitted on March 26, 2007. Based on this review, EPA has concluded that there are no current or unaddressed releases of hazardous waste or hazardous constituents from the Facility.

C. Importance of Public Input

Before EPA makes a final decision on its proposal for the Facility, the public may participate in the remedy selection by reviewing this SB and documents contained in the Administrative Record (AR) for the Facility. The AR contains the complete set of reports that document Facility conditions, including a map of the Facility, in support of EPA's proposed decision. EPA encourages anyone interested to review the AR. A copy of the AR is available for public review from the EPA Region 3 office, the address of which is provided in Section V, below.

EPA will address all significant comments received during the public comment period. If EPA determines that new information or public comments warrant a modification to the proposed decision, EPA will modify the proposed decision or select other alternatives based on such new information and/or public comments. EPA will approve its final decision in a document entitled the Final Decision and Response to Comments (FDRTC).

II. FACILITY BACKGROUND

The Former Rehrig International Facility is located at 901 North Lombardy Street, in Richmond, Virginia. The Facility was constructed in 1904, and was operated by Rehrig International from 1979 until 2000.

The Facility is located in an urban commercial, industrial and residential area. The closest residence is approximately 500 feet from the Facility. The closes surface water body is the James River, 1.6 miles south of the Facility.

Facility operations included manufacturing of shopping carts and shopping baskets. The manufacturing process consisted of metal fabrication, injection molding, and metal plating. Ancillary equipment used by Rehrig included a wastewater treatment system, a diesel fuel Underground Storage Tank (UST), a waste oil Aboveground Storage Tank (AST), and a hydraulic oil AST.

Rehrig's manufacturing activities ceased in 2000, and the Facility was sold in 2002. The Facility has been demolished and a Kroger's grocery store and small retail shops have been constructed in its place.

The Facility at one time operated under interim permit status for container and tank storage. Additionally, the Facility was a large quantity generator (LQG) of hazardous waste.

III. SUMMARY OF ENVIRONMENTAL HISTORY

A 1993 Environmental Site Assessment Update Report identified historical occupants of the Facility to include the State Penitentiary, a book binding business, and an air filter products manufacturer. The Facility was initially constructed by the Export Leaf Tobacco Company and was used for tobacco leaf storage until 1977. Bowe Street Associates purchased the property in 1977. The property remained vacant until 1979 when Rehrig leased a portion of the onsite building. The Facility was again sold in May 2002, to the Broad Street Associates, and again in June 2003 to New River Real Estate. A grocery store and strip mall currently occupy the site.

According to the 1993 Environmental Site Assessment Update Report, the manufacturing process consisted of metal fabrication, injection molding that produced high-density polyethylene (HDPE) parts, and metal plating of nickel and chromium onto the metal parts of the shopping carts (a new plating system was installed in 1993). Ancillary equipment used by Rehrig included a wastewater treatment system, diesel fuel UST, a waste oil AST, and a hydraulic oil AST. Rehrig plated and assembled approximately ¼ million shopping carts and baskets per year.

Hazardous chemical storage areas were used at the site, and Rehrig was a LQG of hazardous waste.

Rehrig treated wastewater generated by the Facility's nickel and chromium electroplating operations in an on-site wastewater treatment system. This wastewater treatment system included 4 stages of treatment in tanks, followed by waste treatment using a filter press to remove water from settled solids. Wastewater from the tanks and filter presses were discharged to the sanitary sewer system in accordance with a Pretreatment Permit issued and administered by the City of Richmond. This Permit was a requirement of the City's Virginia Pollution Discharge Elimination System (VPDES) Municipal Wastewater Treatment Permit issued by the State Water Control Board and VDEQ.

A letter from the Virginia Department of Waste Management to Rehrig dated November 6, 1990 indicated that hazardous waste closure of the Facility had been completed in accordance with the approved closure plan; however, it is not clear if this closure addressed all waste management units.

A Virginia Waste Management Board Consent Order was issued on January 23, 1997 which described numerous violations observed during a July 11, 1996 VDEQ inspection. Violations included administrative items (manifest issues, no job titles for employees who manage hazardous waste, and failure to maintain tank assessment records) and physical violations (failure to keep all containers of hazardous waste closed, storage of incompatible materials, and improper secondary containment). This Order indicated that violations were to be corrected in 90 days. A May 15, 1998, letter from the VDEQ indicated that the facility met the terms of the Order and that the Order had been terminated.

Rehrig operated a wastewater treatment facility under a Pretreatment Permit issued by the City of Richmond; the wastewater discharge from this system was administered and regulated under the City's Municipal VPDES Permit. Rehrig admitted in its plea that in 1998, the company violated its VPDES Permit numerous times by discharging excessive amounts of nickel and chromium (up to 30 times its permitted limits). The City issued Rehrig several citations, and in December 1998 found Rehrig in significant noncompliance with its permit. A May 15, 1998 letter from VDEQ to Rehrig indicated that the Facility met the terms of the Order, and that the Order had been terminated. In early 1999, Rehrig agreed to improve its water treatment system.

In 2001, Rehrig pleaded guilty to criminal violations of the Clean Water Act and was ordered to pay $500,000 for fines, implement pollution prevention improvements at its plant, and perform community service.

Rehrig continued to periodically violate its VPDES Permit, according to EPA officials. At this time, Rehrig began moving its operations to a new site in neighboring Chesterfield County, Virginia.

Rehrig later acknowledged this discharge occurred as a result of lack of staff resources, according to EPA documents. In late September 1999, after additional permit violations by Rehrig and additional citations by the City of Richmond, Rehrig's discharges violated its permit on each of five consecutive days.

After Rehrig pleaded guilty to two criminal misdemeanors, the company was fined $200,000, ordered to make a $290,000 payment for adding pollution prevention/control equipment at its new plant (Chesterfield County Facility), and ordered to make a $10,000 contribution to the James River Advisory Council, a group formed to protect the River. Rehrig was also required to submit an environmental compliance program to the court and its employees were required to perform 400 hours of community service.

Subsequently, Rehrig replaced its plating manager, plant manager, and vice president for production. Rehrig then contracted with an environmental consulting firm to perform wastewater treatment, and operated in compliance with its Chesterfield County Clean Water Act permit. During an unannounced September 10, 2002 compliance inspection, VDEQ determined that Rehrig no longer operated the site. The VDEQ Office of Waste Programs was requested to deactivate the VAD identification number.

In summary, the hazardous waste releases were addressed and closure was certified by the VDEQ on November 6, 1990 and May 15, 1998. All Clean Water Act violations of the VPDES Permit were resolved by the assessment of fines, implementation of pollution prevention improvements, performing community service and eventually closing of the facility.

IV. EVALUATION OF EPA'S PROPOSED DECISION

EPA has determined that its proposed decision for the Facility is protective of human health and the environment and that no further corrective action or controls are necessary at this time.

V. PUBLIC PARTICIPATION

Interested person are invited to comment on EPA's proposed decision. The public comment period will last thirty (30) calendar days from the date the notice is published in a local newspaper. Comments may be submitted by mail, fax, e-mail, or phone to Mr. Denis Zielinski at the address listed below.

A public meeting will be held upon request. Requests for a public meeting should be made to Mr. Denis Zielinski at the address listed below. A meeting will not be scheduled unless one is requested.

The Administrative Record contains all the information considered by EPA for the proposed decision at this Facility. To receive a copy of the Administrative Record, contact Mr. Denis Zielinski at the address below:

U.S. EPA Region 3
1650 Arch Street
Philadelphia, PA 19103
Contact: Mr. Denis Zielinski (3LC20)
Phone: (215) 814-3431
Fax: (215) 814-3114
Email: zielinski.denis@epa.gov

Section 2

Environmental Indicator Forms

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION
Interim Final 2/5/99
RCRA Corrective Action
Environmental Indicator (EI) RCRIS code (CA725)
Current Human Exposures Under Control

Facility Name: **Former Rehrig International Facility**
Facility Address: **901 North Lombardy Street, Richmond, Virginia**
Facility EPA ID #: **VAD 089 028 377**

1. Has **all** available relevant/significant information on known and reasonably suspected releases to soil, groundwater, surface water/sediments, and air, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

☒ If yes - check here and continue with #2 below.

☐ If no - re-evaluate existing data, or

☐ If data are not available, skip to #6 and enter "IN" (more information needed) status code.

BACKGROUND

The former Rehrig facility is located at 901 North Lombardy Street, Richmond, Virginia. The site is located in an urban commercial, industrial, and residential area. According to the City of Richmond property report, the site address is also known as 630 Bowe Street and 800 Bowe Street. The current owner is Kroger Real Estate Department of Roanoke, Virginia.

The first known facility structure was a single building constructed in 1904 by the Export Leaf Tobacco Company and was used for tobacco leaf storage until 1977. Bowe Street Associates purchased the property in 1977. The property remained vacant until 1979 when Rehrig leased a portion of the onsite building. According to the 1993 Environmental Site Assessment Update Report, the State Penitentiary, a book binding business, and an air filter products manufacturer also historically occupied the site. Previous owners were listed as the Broad Street Associates, who purchased the property in May 2002 and New River Real Estate who purchased the property in June 2003.

The Rehrig facility was approximately 250,000 square feet in size. Rehrig manufactured grocery shopping carts and shopping baskets at the site from 1979 to 2000. According to the 1993 Environmental Site Assessment Update Report, the manufacturing process consisted of metal fabrication, injection molding that produced high-density polyethylene (HDPE) parts, and metal plating of nickel and chromium onto the metal parts of the shopping carts (a new plating system was installed in 1993). Ancillary equipment used by Rehrig included a wastewater treatment system, diesel fuel Underground Storage Tank (UST), a waste oil Aboveground Storage Tank (AST), and a hydraulic oil AST. Rehrig plated and assembled approximately ¼ million shopping carts and baskets per year.

The Rehrig facility maintained an onsite wastewater treatment system to treat process water that contained nickel and chromium electroplating operations in an on-site wastewater treatment system. This system discharged treated water to the City of Richmond under a Pretreatment Permit issued and administered by the City of Richmond.

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the

environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of "Current Human Exposures Under Control" EI

A positive "Current Human Exposures Under Control" EI determination ("YE" status code) indicates that there are no "unacceptable" human exposures to "contamination" (i.e., contaminants in concentrations in excess of appropriate risk-based levels) that can be reasonably expected under current land- and groundwater-use conditions (for all "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The "Current Human Exposures Under Control" EI are for reasonably expected human exposures under current land- and groundwater-use conditions ONLY, and do not consider potential future land- or groundwater-use conditions or ecological receptors. The RCRA Corrective Action program's overall mission to protect human health and the environment requires that Final remedies address these issues (i.e., potential future human exposure scenarios, future land and groundwater uses, and ecological receptors).

Duration / Applicability of EI Determinations

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

Current Human Exposures Under Control Center
Environmental Indicator (EI) RCRIS code (CA725)

2. Are groundwater, soil, surface water, sediments, or air **media** known or reasonably suspected to be **"contaminated"**[1] above appropriately protective risk-based "levels" (applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action (from SWMUs, RUs or AOCs)?

	Yes	No	?	Rationale / Key Contaminants
Groundwater		X		
Air (indoors)[2]		X		
Surface Soil (e.g., <2 ft)		X		
Surface Water		X		
Sediment		X		
Subsurf. Soil (e.g., >2 ft)		X		
Air (outdoors)		X		

☒ If no (for all media) - skip to #6, and enter "YE," status code after providing or citing appropriate "levels," and referencing sufficient supporting documentation demonstrating that these "levels" are not exceeded.

☐ If yes (for any media) - continue after identifying key contaminants in each "contaminated" medium, citing appropriate "levels" (or provide an explanation for the determination that the medium could pose an unacceptable risk), and referencing supporting documentation.

☐ If unknown (for any media) - skip to #6 and enter "IN" status code.

Rationale and Reference(s):

Two releases to the environment occurred at the site and were remediated to regulatory agency satisfaction, as follows.

- Hydraulic oil-contaminated soil was discovered during facility expansion activities and removed. This incident was closed to the satisfaction of the State Water Control Board and the Richmond Fire Department.
- Soil contamination below Virginia State Water Control Board reportable levels was detected during a 1989 diesel fuel UST removal activity

No evidence of other spills other releases were found during the November 2, 2006 RCRA Corrective Action site visit.

No groundwater monitoring wells are known to have been installed at the site nor was groundwater encountered in 15-foot deep soil borings advanced in 1993. While groundwater quality is unknown as described below, it is not used for potable purposes. No groundwater wells were located within a three-mile radius of the site at the time of the 1989 Preliminary Assessment Report. The 1989 Preliminary Assessment Report indicated that groundwater contamination was not expected due to the plating tanks having concrete containment systems and the fact that all processes took place indoors.

Potable water is supplied to the former Rehrig site and surrounding area by the City of Richmond. The source of the water is the James River; the intake is approximately three miles upstream and southwest of the site.

City of Richmond Ordinance Division 4 – Water Service Connections, Pipes, and Meters – Section 106-336 – Duties of Owners and Tenants indicates that all newly constructed or existing buildings be connected to the public water service system. The Ordinance also notes that owners who have used another water supply system (for example, a well) that was installed and used prior to January 1, 1970 are not required to have a public water connection if it can be proven that the alternative water supply is not detrimental to public health and safety, as approved by the Richmond City Health District. The ordinance also states that a property owner is able to drill a new potable well provided the Richmond City Health District approves the well and water quality.

TtEC contacted the Richmond City Health District for clarification of this ordinance. An environmental inspector indicated that 98 percent of the City of Richmond is served by municipal water (the vicinity of the site is included in this 98 percent) and that the District does not approve wells for potable use. The inspector reported that if there are any wells in the vicinity of the site, they are for irrigation purposes only.

The former Rehrig site is now the location of a Kroeger's Grocery Store and small retail stores. No documentation was found in VDEQ or USEPA Region III files regarding indoor or outdoor air issues.

Footnotes:

[1] "Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriately protective risk-based "levels" (for the media, that identify risks within the acceptable risk range).

[2] Recent evidence (from the Colorado Dept. of Public Health and Environment, and others) suggest that unacceptable indoor air concentrations are more common in structures above groundwater with volatile contaminants than previously believed. This is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration necessary to be reasonably certain that indoor air (in structures located above (and adjacent to) groundwater with volatile contaminants) does not present unacceptable risks.

Current Human Exposures Under Control
Environmental Indicator (EI) RCRIS code (CA725)

3. Are there **complete pathways** between "contamination" and human receptors such that exposures can be reasonably expected under the current (land- and groundwater-use) conditions?

Summary Exposure Pathway Evaluation Table

Potential **Human Receptors** (Under Current Conditions)

"Contaminated" Media	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food[3]
Groundwater							
Air (indoors)							
Soil (surface, e.g., <2 ft)							
Surface Water							
Sediment							
Soil (subsurface e.g., >2 ft)							
Air (outdoors)							

Instructions for Summary Exposure Pathway Evaluation Table:

1. Strike-out specific Media including Human Receptors' spaces for Media, which are not "contaminated" as identified in #2 above.

2. Enter "yes" or "no" for potential "completeness" under each "Contaminated" Media -- Human Receptor combination (Pathway).

Note: In order to focus the evaluation to the most probable combinations some potential "Contaminated" Media - Human Receptor combinations (Pathways) do not have check spaces ("___"). While these combinations may not be probable in most situations they may be possible in some settings and should be added as necessary.

☐ If no (pathways are not complete for any contaminated media-receptor combination) - skip to #6, and enter "YE" status code, after explaining and/or referencing condition(s) in-place, whether natural or man-made, preventing a complete exposure pathway from each contaminated medium (e.g., use optional Pathway Evaluation Work Sheet to analyze major pathways).

☐ If yes (pathways are complete for any "Contaminated" Media - Human Receptor combination) - continue after providing supporting explanation.

☐ If unknown (for any "Contaminated" Media - Human Receptor combination) - skip to #6 and enter "IN" status code.

Rationale and Reference(s):

[3] Indirect Pathway/Receptor (e.g., vegetables, fruits, crops, meat and dairy products, fish, shellfish, etc.)

Current Human Exposures Under Control
Environmental Indicator (EI) RCRIS code (CA725)

4. Can the **exposures** from any of the complete pathways identified in #3 be reasonably expected to be **"significant"**[4] (i.e., potentially "unacceptable" because exposures can be reasonably expected to be: 1) greater in magnitude (intensity, frequency and/or duration) than assumed in the derivation of the acceptable "levels" (used to identify the "contamination"); or 2) the combination of exposure magnitude (perhaps even though low) and contaminant concentrations (which may be substantially above the acceptable "levels") could result in greater than acceptable risks)?

☐ If no (exposures can not be reasonably expected to be significant (i.e., potentially "unacceptable") for any complete exposure pathway) - skip to #6 and enter "YE" status code after explaining and/or referencing documentation justifying why the exposures (from each of the complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

☐ If yes (exposures could be reasonably expected to be "significant" (i.e., potentially "unacceptable") for any complete exposure pathway) - continue after providing a description (of each potentially "unacceptable" exposure pathway) and explaining and/or referencing documentation justifying why the exposures (from each of the remaining complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

☐ If unknown (for any complete pathway) - skip to #6 and enter "IN" status code

Rationale and Reference(s):

[4] If there is any question on whether the identified exposures are "significant" (i.e., potentially "unacceptable") consult a human health Risk Assessment specialist with appropriate education, training and experience.

Current Human Exposures Under Control
Environmental Indicator (EI) RCRIS code (CA725)

5. Can the "significant" **exposures** (identified in #4) be shown to be within **acceptable** limits?

☐ If yes (all "significant" exposures have been shown to be within acceptable limits) - continue and enter "YE" after summarizing and referencing documentation justifying why all "significant" exposures to "contamination" are within acceptable limits (e.g., a site-specific Human Health Risk Assessment).

☐ If no - (there are current exposures that can be reasonably expected to be "unacceptable")- continue and enter "NO" status code after providing a description of each potentially "unacceptable" exposure.

☐ If unknown (for any potentially "unacceptable" exposure) - continue and enter "IN" status code.

Rationale and Reference(s):

Current Human Exposures Under Control
Environmental Indicator (EI) RCRIS code (CA725)

6. Check the appropriate RCRIS status codes for the Current Human Exposures Under Control EI (event code CA725), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (attach appropriate supporting documentation as well as a map of the facility).

☒ YE - Yes, "Current Human Exposures Under Control" has been verified. Based on a review of the information contained in this EI Determination, "Current Human Exposures" are expected to be "Under Control" at the Former Rehrig International facility, EPA ID # VAD 089 028 377, located at 901 North Lombardy Street in Richmond, Virginia under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.

☐ NO - "Current Human Exposures" are NOT "Under Control."

☐ IN - More information is needed to make a determination.

Completed by (signature) Denis Zielinski Date 1/22/09
(print) DENIS ZIELINSKI
(title) SENIOR RPM

Supervisor (signature) [signature] Date 1/22/09
(print) [illegible]
(title) Associate Director, Land & Chemicals Division
(EPA Region or State) Region III

Locations where References may be found:

US EPA Region III
Waste & Chemicals Management Division
1650 Arch Street
Philadelphia, PA 19103

Contact telephone and e-mail numbers
(name) Denis M. Zielinski
(phone #) 215-814-3431
(e-mail) zielinski.denis@epa.gov

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION
Interim Final 2/5/99
RCRA Corrective Action
Environmental Indicator (EI) RCRIS code (CA750)
Migration of Contaminated Groundwater Under Control

Facility Name: **Former Rehrig International Facility**
Facility Address: **901 North Lombardy Street, Richmond, Virginia**
Facility EPA ID #: **VAD 089 028 377**

1. Has **all** available relevant/significant information on known and reasonably suspected releases to the groundwater media, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

☒ If yes - check here and continue with #2 below.

☐ If no - re-evaluate existing data, or

☐ If data are not available, skip to #8 and enter "IN" (more information needed) status code.

BACKGROUND

The former Rehrig facility is located at 901 North Lombardy Street, Richmond, Virginia. The site is located in an urban commercial, industrial, and residential area. According to the City of Richmond property report, the site address is also known as 630 Bowe Street and 800 Bowe Street. The current owner is Kroger Real Estate Department of Roanoke, Virginia.

The first known facility structure was a single building constructed in 1904 by the Export Leaf Tobacco Company and was used for tobacco leaf storage until 1977. Bowe Street Associates purchased the property in 1977. The property remained vacant until 1979 when Rehrig leased a portion of the onsite building. According to the 1993 Environmental Site Assessment Update Report, the State Penitentiary, a book binding business, and an air filter products manufacturer also historically occupied the site. Previous owners were listed as the Broad Street Associates, who purchased the property in May 2002 and New River Real Estate who purchased the property in June 2003.

The Rehrig facility was approximately 250,000 square feet in size. Rehrig manufactured grocery shopping carts and shopping baskets at the site from 1979 to 2000. According to the 1993 Environmental Site Assessment Update Report, the manufacturing process consisted of metal fabrication, injection molding that produced high-density polyethylene (HDPE) parts, and metal plating of nickel and chromium onto the metal parts of the shopping carts (a new plating system was installed in 1993). Ancillary equipment used by Rehrig included a wastewater treatment system, diesel fuel Underground Storage Tank (UST), a waste oil Aboveground Storage Tank (AST), and a hydraulic oil AST. Rehrig plated and assembled approximately ¼ million shopping carts and baskets per year.

The Rehrig facility maintained an onsite wastewater treatment system to treat process water that contained nickel and chromium electroplating operations in an on-site wastewater treatment system. This system discharged treated water to the City of Richmond under a Pretreatment Permit issued and administered by the City of Richmond.

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of "Migration of Contaminated Groundwater Under Control" EI

A positive "Migration of Contaminated Groundwater Under Control" EI determination ("YE" status code) indicates that the migration of "contaminated" groundwater has stabilized, and that monitoring will be conducted to confirm that contaminated groundwater remains within the original "area of contaminated groundwater" (for all groundwater "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, (GPRA). The "Migration of Contaminated Groundwater Under Control" EI pertains ONLY to the physical migration (i.e., further spread) of contaminated ground water and contaminants within groundwater (e.g., non-aqueous phase liquids or NAPLs). Achieving this EI does not substitute for achieving other stabilization or final remedy requirements and expectations associated with sources of contamination and the need to restore, wherever practicable, contaminated groundwater to be suitable for its designated current and future uses.

Duration / Applicability of EI Determinations

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

Migration of Contaminated Groundwater Under Control
Environmental Indicator (EI) RCRIS code (CA750)

2. Is **groundwater** known or reasonably suspected to be **"contaminated"**[1] above appropriately protective "levels" (i.e., applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action, anywhere at, or from, the facility?

   ☐ If yes - continue after identifying key contaminants, citing appropriate "levels," and referencing supporting documentation.

   X If no - skip to #8 and enter "YE" status code, after citing appropriate "levels," and referencing supporting documentation to demonstrate that groundwater is not "contaminated."

   ☐ If unknown - skip to #8 and enter "IN" status code.

Rationale and Reference(s):

Two releases to the environment occurred at the site and were remediated to regulatory agency satisfaction.

- Hydraulic oil-contaminated soil was discovered during facility expansion activities and removed. This incident was closed to the satisfaction of the State Water Control Board and the Richmond Fire Department.
- Soil contamination below Virginia State Water Control Board reportable levels was detected during a 1989 diesel fuel UST removal activity

No evidence of other releases to soil or groundwater were found in files reviewed at VDEQ or USEPA Region III offices. No groundwater monitoring wells are known to have been installed at the site nor was groundwater encountered in 15-foot deep soil borings advanced in 1993. Therefore, groundwater quality is unknown. No groundwater wells were located within a three-mile radius of the site at the time of the 1989 Preliminary Assessment Report. The 1989 Preliminary Assessment Report indicated that groundwater contamination was not expected due to the plating tanks having concrete containment systems and the fact that all processes took place indoors.

Potable water is supplied to the former Rehrig site and surrounding area by the City of Richmond. The source of the water is the James River; the intake is approximately three miles upstream and southwest of the site.

"City of Richmond Ordinance Division 4 – Water Service Connections, Pipes, and Meters – Section 106-336 – Duties of Owners and Tenants" indicates that all newly constructed or existing buildings be connected to the public water service system. The Ordinance also notes that owners who have used another water supply system (for example, a well) that was installed and used prior to January 1, 1970 are not required to have a public water connection if it can be proven that the alternative water supply is not detrimental to public health and safety, as approved by the Richmond City Health District. The ordinance also states that a property owner is able to drill a new potable well provided the Richmond City Health District approves the well and water quality.

TtEC contacted the Richmond City Health District for clarification of this ordinance. An environmental inspector indicated that 98 percent of the City of Richmond is served by municipal water (the vicinity of the site is included in this 98 percent) and that the District does not approve wells for potable use. The inspector reported that if there are any wells in the vicinity of the site, they are for irrigation purposes only.

Footnotes:

[1]"Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriate "levels" (appropriate for the protection of the groundwater resource and its beneficial uses).

Migration of Contaminated Groundwater Under Control
Environmental Indicator (EI) RCRIS code (CA750)

3. Has the **migration** of contaminated groundwater **stabilized** (such that contaminated groundwater is expected to remain within "existing area of contaminated groundwater"[2] as defined by the monitoring locations designated at the time of this determination)?

   ☐ If yes - continue, after presenting or referencing the physical evidence (e.g., groundwater sampling/measurement/migration barrier data) and rationale why contaminated groundwater is expected to remain within the (horizontal or vertical) dimensions of the "existing area of groundwater contamination"[2]).

   ☐ If no (contaminated groundwater is observed or expected to migrate beyond the designated locations defining the "existing area of groundwater contamination"[2]) – skip to #8 and enter "NO" status code, after providing an explanation.

   ☐ If unknown - skip to #8 and enter "IN" status code.

Rationale and Reference(s):

[2] "existing area of contaminated groundwater" is an area (with horizontal and vertical dimensions) that has been verifiably demonstrated to contain all relevant groundwater contamination for this determination, and is defined by designated (monitoring) locations proximate to the outer perimeter of "contamination" that can and will be sampled/tested in the future to physically verify that all "contaminated" groundwater remains within this area, and that the further migration of "contaminated" groundwater is not occurring. Reasonable allowances in the proximity of the monitoring locations are permissible to incorporate formal remedy decisions (i.e., including public participation) allowing a limited area for natural attenuation.

Migration of Contaminated Groundwater Under Control
Environmental Indicator (EI) RCRIS code (CA750)

4. Does "contaminated" groundwater **discharge** into **surface water** bodies?

☐ If yes - continue after identifying potentially affected surface water bodies.

☐ If no - skip to #7 (and enter a "YE" status code in #8, if #7 = yes) after providing an explanation and/or referencing documentation supporting that groundwater "contamination" does not enter surface water bodies.

☐ If unknown - skip to #8 and enter "IN" status code.

Rationale and Reference(s):

Migration of Contaminated Groundwater Under Control
Environmental Indicator (EI) RCRIS code (CA750)

5. Is the **discharge** of "contaminated" groundwater into surface water likely to be **"insignificant"** (i.e., the maximum concentration[3] of each contaminant discharging into surface water is less than 10 times their appropriate groundwater "level," and there are no other conditions (e.g., the nature, and number, of discharging contaminants, or environmental setting), which significantly increase the potential for unacceptable impacts to surface water, sediments, or eco-systems at these concentrations)?

☐ If yes - skip to #7 (and enter "YE" status code in #8 if #7 = yes), after documenting:
1) the maximum known or reasonably suspected concentration[3] of key contaminants discharged above their groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and
2) provide a statement of professional judgment/explanation (or reference documentation) supporting that the discharge of groundwater contaminants into the surface water is not anticipated to have unacceptable impacts to the receiving surface water, sediments, or eco-system.

☐ If no - (the discharge of "contaminated" groundwater into surface water is potentially significant) - continue after documenting:
1) the maximum known or reasonably suspected concentration[3] of each contaminant discharged above its groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and
2) for any contaminants discharging into surface water in concentrations[3] greater than 100 times their appropriate groundwater "levels," the estimated total amount (mass in kg/yr) of each of these contaminants that are being discharged (loaded) into the surface water body (at the time of the determination), and identify if there is evidence that the amount of discharging contaminants is increasing.

☐ If unknown - enter "IN" status code in #8.

Rationale and Reference(s):

[3] As measured in groundwater prior to entry to the groundwater-surface water/sediment interaction (e.g., hyporheic) zone.

Migration of Contaminated Groundwater Under Control
Environmental Indicator (EI) RCRIS code (CA750)

6. Can the **discharge** of "contaminated" groundwater into surface water be shown to be "**currently acceptable**" (i.e., not cause impacts to surface water, sediments or eco-systems that should not be allowed to continue until a final remedy decision can be made and implemented[4])?

☐ If yes - continue after either:
1) identifying the Final Remedy decision incorporating these conditions, or other site-specific criteria (developed for the protection of the site's surface water, sediments, and eco-systems), and referencing supporting documentation demonstrating that these criteria are not exceeded by the discharging groundwater;
OR
2) providing or referencing an interim-assessment[5], appropriate to the potential for impact that shows the discharge of groundwater contaminants into the surface water is (in the opinion of a trained specialists, including ecologist) adequately protective of receiving surface water, sediments, and eco-systems, until such time when a full assessment and final remedy decision can be made. Factors which should be considered in the interim-assessment (where appropriate to help identify the impact associated with discharging groundwater) include: surface water body size, flow, use/classification/habitats and contaminant loading limits, other sources of surface water/sediment contamination, surface water and sediment sample results and comparisons to available and appropriate surface water and sediment "levels," as well as any other factors, such as effects on ecological receptors (e.g., via bio-assays/benthic surveys or site-specific ecological Risk Assessments), that the overseeing regulatory agency would deem appropriate for making the EI determination.

☐ If no - (the discharge of "contaminated" groundwater can not be shown to be "**currently acceptable**") - skip to #8 and enter "NO" status code, after documenting the currently unacceptable impacts to the surface water body, sediments, and/or eco-systems.

☐ If unknown - skip to 8 and enter "IN" status code.

Rationale and Reference(s):

[4] Note, because areas of inflowing groundwater can be critical habitats (e.g., nurseries or thermal refugia) for many species, appropriate specialist (e.g., ecologist) should be included in management decisions that could eliminate these areas by significantly altering or reversing groundwater flow pathways near surface water bodies.

[5] The understanding of the impacts of contaminated groundwater discharges into surface water bodies is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration to be reasonably certain that discharges are not causing currently unacceptable impacts to the surface waters, sediments or eco-systems.

Migration of Contaminated Groundwater Under Control
Environmental Indicator (EI) RCRIS code (CA750)

7. Will groundwater **monitoring** / measurement data (and surface water/sediment/ecological data, as necessary) be collected in the future to verify that contaminated groundwater has remained within the horizontal (or vertical, as necessary) dimensions of the "existing area of contaminated groundwater?"

☐ If yes - continue after providing or citing documentation for planned activities or future sampling/measurement events. Specifically identify the well/measurement locations, which will be tested in the future to verify the expectation (identified in #3) that groundwater contamination will not be migrating horizontally (or vertically, as necessary) beyond the "existing area of groundwater contamination."

☐ If no - enter "NO" status code in #8.

☐ If unknown - enter "IN" status code in #8.

Rationale and Reference(s):

Migration of Contaminated Groundwater Under Control
Environmental Indicator (EI) RCRIS code (CA750)

8. Check the appropriate RCRIS status codes for the Migration of Contaminated Groundwater Under Control EI (event code CA750), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (attach appropriate supporting documentation as well as a map of the facility).

X YE - Yes, "Migration of Contaminated Groundwater Under Control" has been verified. Based on a review of the information contained in this EI determination, it has been determined that the "Migration of Contaminated Groundwater" is "Under Control" at the Former Rehrig International facility, EPA ID # VAD 089 028 377, located at 901 North Lombardy Street, in Richmond, Virginia. Specifically, this determination indicates that the migration of "contaminated" groundwater is under control, and that monitoring will be conducted to confirm that contaminated groundwater remains within the "existing area of contaminated groundwater" This determination will be re-evaluated when the Agency becomes aware of significant changes at the facility.

☐ NO - Unacceptable migration of contaminated groundwater is observed or expected.

☐ IN - More information is needed to make a determination.

Completed by (signature) Den Zielinski Date 1/22/09
(print) DENIS ZIELINSKI
(title) SENIOR RPM

Supervisor (signature) [signature] Date 1/22/09
(print) Luis Pizarro
(title) Associate Director, Land Chemicals Division
(EPA Region or State) Region III

Locations where References may be found:

US EPA Region III
Waste & Chemicals Management Division
1650 Arch Street
Philadelphia, PA 19103

Contact telephone and e-mail numbers
(name) Denis M. Zielinski
(phone #) 215-814-3431
(e-mail) zielinski.denis@epa.gov

Section 3

RCRA Site Visit Report

TETRA TECH EC, INC.

March 26, 2007

Denis Zielinski
United States Environmental Protection Agency
Region III
1650 Arch Street
Mail Code 3WC23
Philadelphia, PA 19103-2029

SUBJECT: FINAL RCRA CORRECTIVE ACTION SITE VISIT REPORT
USACE CONTRACT NO. W912BU-04-D-0001
TASK ORDER NO. 0004

Please find enclosed one paper copy and one electronic copy on CD Rom of the Final RCRA Site Visit Report for the following facility:

Former Rehrig International, 901 North Lombardy Street, Richmond, VA 23220
USEPA ID # VAD 089 028 377

Please contact me at (215) 702-4023 with any questions or concerns.

Sincerely,

Jonathan Dziekan
TtEC Project Manager

Enclosures
Cc: Mr. Richard Criqui (VDEQ – 2 copies)
Mr. Michael Mohn (USACE)
Mr. Barry Shelley (Pro Chem)
Ms. Wendy DeMaio (TtEC)

Bucks Town Corporate Campus, 820 Town Center Drive, Suite 100, Langhorne, PA 19047-1748
Tel 215.702.4000 Fax 215.702.4045
www.tteci.com

United States Environmental Protection Agency, Region III
Corrective Action Program

FINAL RCRA SITE VISIT REPORT

Former Rehrig International Facility
USEPA ID # VAD 089 028 377
901 North Lombardy Street
Richmond, Virginia 23220

Prepared for:

United States Environmental Protection Agency
Region III
1650 Arch Street
Philadelphia, PA 19103-4431

Virginia Department of Environmental Quality
629 East Main Street
Richmond, VA 23219

Prepared by:

Tetra Tech EC, Inc.
Bucks Town Corporate Campus
820 Town Center Drive, Suite 100
Langhorne, PA 19047

March 2007

This RCRA SITE VISIT REPORT (Final) incorporates USEPA, VDEQ and facility representative comments to a DRAFT FINAL Report and has been prepared by:

Roxanne Clarke — 3/26/07

Roxanne Clarke
Environmental Engineer
Tetra Tech EC, Inc.

Date

The report was approved by:

3/26/07

Jonathan Dziekan, EIT
Project Manager
Tetra Tech EC, Inc.

Date

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RCRA SITE VISIT REPORT
Rehrig International
VAD 089 028 377
901 North Lombardy Street
Richmond, Virginia 23220

1.0 PURPOSE

The purpose of this site report is to consolidate relevant information from Rehrig International (Rehrig) regarding the facility associated with United States Environmental Protection Agency (USEPA) ID Number VAD 089028377. This information will be used to augment the existing facility information.

2.0 DOCUMENTATION REVIEW

Prior to the meeting, Mr. Jonathan Dziekan of Tetra Tech EC, Inc. (TtEC) conducted a review of files on record at the Commonwealth of Virginia Department of Environmental Quality (VDEQ) Central Office in Richmond, Virginia. A similar file review was conducted at the USEPA Region III office in Philadelphia, Pennsylvania. Files from the regional office of VDEQ Piedmont (Tidewater) were provided to TtEC after the site visit. The purpose of this review was to identify known Areas of Concern (AOCs) and Solid Waste Management Units (SWMUs) at the former Rehrig International facility prior to conducting a site visit.

3.0 SITE VISIT

An onsite meeting and a site visit were conducted on November 29, 2006 to discuss the former Rehrig facility located at 901 North Lombardy Street in Richmond, Virginia. A list of attendees at that site visit is as follows:

Name	Company/Agency	Telephone Number	E-mail Address
Roxanne Clarke	TtEC	215-702-4003	Roxanne.Clarke@tteci.com
Jonathan Dziekan	TtEC	215-702-4023	Jonathan.Dziekan@tteci.com
Matthew Stepien	VDEQ	804-698-4026	mmstepien@deq.virginia.gov
Clint Shettle	VDEQ	804-527-5032	ctshettle@deq.virginia.gov
Denis Zielinski	USEPA Region III	215-814-3431	zielinski.denis@epa.gov
Barry Shelley	Pro Chem (consultant representing Rehrig)	540-268-9884	bshelley@prochemweb.com
Patrick Davis	Pro Chem (consultant representing Rehrig)	804-743-9600	pdavis@prochemweb.com

4.0 MEETING SUMMARY

A meeting at the former Rehrig International facility was held with the attendees noted above on November 29, 2006. Mr. Denis Zielinski, USEPA Region III Resource Conservation and Recovery Act (RCRA) Project Manager, presented the facility with information regarding USEPA Region III's Corrective Action process, the Environmental Indicator Assessment Program, 20/20 Vision, the facility Lead Program, and the policy driving this program.

Mr. Zielinski also discussed Virginia's Brownfields Program in addition to the Virginia Clean Water Revolving Loan fund. The fund allows for the acquisition of low interest Brownfield loans for corrective actions that remediate or protect surface or if groundwater in the Commonwealth of Virginia.

Under this investigation, USEPA Region III is focusing on two interim Environmental Indicators to evaluate whether any unacceptable risk to human health and the environment is ongoing at the facility. The two indicators are determining if human exposures are controlled and if groundwater releases are controlled.

The Facility Lead Program, as described by Mr. Zielinski allows facilities under RCRA Corrective Action to proactively implement measures that resolve Corrective Action Items without a Corrective Action Order or Permit. The Facility Lead Program eliminates administrative burdens and expedites the resolution of Corrective Action Items.

The site visit continued with a brief description of the former facility's activities and corrective actions provided by Mr. Barry Shelley of Pro Chem (Rehrig's consultant). No photographs of specific SWMU areas were taken as the facility has been demolished and a Krogers grocery store and small retail shops were constructed in its place. However, photographs of the general property conditions were taken. Neither the Krogers grocery store nor the small retail shops were toured as part of the site visit. Photographs of the current conditions can be found in Appendix A.

5.0 LOCATION, SUMMARY OF OPERATIONAL AND MANAGEMENT HISTORY, AND DESCRIPTION OF WASTES GENERATED AT THE FACILITY

The former Rehrig facility is located at 901 North Lombardy Street, Richmond, Virginia. Figure 1, located in Appendix B of this report, provides the Site Location Map. Figure 2, located in Appendix B of this report, provides the Site Layout Map for the facility. Figures 3 and 4 provide Building Layout Maps. The site is located in an urban commercial, industrial, and residential area.

According to the City of Richmond property report, the site address is also known as:

- 630 Bowe Street
- 800 Bowe Street

The current owner is Kroger Real Estate Department of Roanoke, Virginia.

The first known facility structure was a single building constructed in 1904 by the Export Leaf Tobacco Company and was used for tobacco leaf storage until 1977. Bowe Street Associates purchased the property in 1977. The property remained vacant until 1979 when Rehrig leased a portion of the onsite building.

According to the 1993 Environmental Site Assessment Update Report, the State Penitentiary, a book binding business, and an air filter products manufacturer also historically occupied the site. Previous owners were listed as the Broad Street Associates, who purchased the property in May 2002 and New River Real Estate who purchased the property in June 2003.

The Rehrig facility was approximately 250,000 square feet in size. Rehrig manufactured grocery shopping carts and shopping baskets at the site from 1979 to 2000. According to the 1993 Environmental Site Assessment Update Report, the manufacturing process consisted of metal fabrication, injection molding that produced high-density polyethylene (HDPE) parts, and metal plating of nickel and chromium onto the metal parts of the shopping carts (a new plating system was installed in 1993). Ancillary equipment used by Rehrig included a wastewater treatment system, diesel fuel Underground Storage Tank (UST), a waste oil Aboveground Storage Tank (AST), and a hydraulic oil AST. Rehrig plated and assembled approximately ¼ million shopping carts and baskets per year.

Three hazardous chemical storage areas were reportedly used at the site. Documents reviewed by TtEC provided conflicting information regarding the number of hazardous storage areas. This information is difficult to clarify as the Rehrig facility no longer exists and current Rehrig employees were unable to provide input during the November 29, 2006 site visit. Rehrig was a Large Quantity Generator (LQG) of hazardous waste.

The Rehrig facility provided treatment of the wastewater generated from the facility's nickel and chromium electroplating operations in an on-site wastewater treatment system. This wastewater treatment system included 4 stages of treatment in tanks, followed by waste treatment using a filter press to remove water from settled solids. Wastewater from the tanks and filter presses were discharged to the sanitary sewer system in accordance with a Pretreatment Permit issued and administered by the City of Richmond. This Permit was a requirement of the City's VPDES Municipal Wastewater Treatment Permit issued by the State Water Control Board and VDEQ.

The wastewater treatment sludge generated from the wastewater treatment system and filter presses was classified as a F006 listed waste code. The facility also generated acid waste and alkaline waste and these waste streams also carried the following characteristic waste codes; D002, D007, and D008.

A Compliance Order was issued by the Virginia Department of Health on December 26, 1984. The Virginia Department of Health found that Rehrig had not complied with financial requirements for hazardous waste management facilities in accordance with Virginia Hazardous Waste Management Regulations (VHWMR). Rehrig was required to provide documentation of compliance with these financial regulations by March 1, 1985.

A letter from the Virginia Department of Waste Management to Rehrig dated November 6, 1990 indicated that hazardous waste closure of the facility had been complete in accordance with the approved closure plan. It is not clear if this letter addressed all of the SWMUs.

A Virginia Waste Management Board Consent Order was issued on January 23, 1997 which described numerous violations observed during a July 11, 1996 VDEQ inspection. Violations included administrative items (manifest issues, no job titles for employees who manage hazardous waste, and failure to maintain tank assessment records) and physical violations (failure to keep all containers of hazardous waste closed, storage of incompatible materials, and improper secondary containment).

After several discussions between VDEQ and Rehrig, the facility entered into the January 1997 Order voluntarily. The Order indicated that violations were to be corrected in 90 days. A May 15, 1998 letter from VDEQ to Rehrig indicated that the facility met the terms of the Order and that the Order had been terminated.

In 2001, Rehrig pleaded guilty to criminal violations of the Clean Water Act and was ordered to pay $500,000 for fines, implement pollution prevention improvements at its plant and perform a community service contribution.

Rehrig operated a wastewater treatment facility under a Pretreatment Permit issued by the City of Richmond; the wastewater discharge from this system was administered and regulated under the City's Municipal VPDES Permit. Rehrig admitted in its plea that in 1998, the company violated its permit numerous times by discharging excessive amounts of nickel and chromium (up to 30 times its permitted limits). The city issued Rehrig several citations, and in December 1998 found Rehrig in significant noncompliance with its permit. In early 1999, Rehrig agreed to improve its water treatment system.

According to a Water Tech Online internet article (http://www.waternet.com/news.asp?mode=4&N_ID=23614), Rehrig pleaded guilty to criminal violations of the Clean Water Act in June 2001 in US District Court here and was sentenced to pay $500,000 for fines, pollution prevention improvements at its plant, and a community service contribution.

Just prior to this plea, a Rehrig employee was sentenced to six months of home confinement, with weekends in jail for 120 days, and ordered to pay a fine of $7,500 after he pleaded guilty to a related Clean Water Act offense. He was also required to give three speeches on the importance of Clean Water Act compliance to industry managers.

Rehrig admitted that it violated its permit numerous times in 1998 by discharging excessive amounts of nickel and chromium. The City issued Rehrig several citations, and in December 1998 found Rehrig in significant noncompliance with its permit. In early 1999, Rehrig pledged to dedicate additional resources to wastewater treatment and promised to improve the supervision of its wastewater treatment operators.

However, Rehrig continued to periodically violate its permit, according to USEPA officials. At this time, Rehrig began moving its operations to a new site in neighboring Chesterfield County, Virginia.

On June 10, 1999, Rehrig discharged chromium into city sewers in amounts approximately 30 times the permit limits, and nickel in amounts six times the permit limits.

The company later acknowledged that this discharge occurred as the result of lack of staff resources, according to USEPA documents. In late September 1999, after additional permit violations by Rehrig and additional citations by the City of Richmond, Rehrig's discharges violated its permit on each of five consecutive days.

After Rehrig pleaded guilty to two criminal misdemeanors, the company was fined $200,000, ordered to make a $290,000 payment for adding pollution prevention/control equipment at its new plant (Chesterfield County facility), and ordered to make a $10,000 contribution to the James River Advisory Council, a group formed to protect the river flowing through Richmond. Rehrig was also required to submit to the court an environmental compliance program, and its employees were required to perform 400 hours of community service.

Subsequently, Rehrig replaced its plating manager, plant manager, and vice president for production. Rehrig then contracted with an environmental consulting firm to perform wastewater treatment, and operated in compliance with its Chesterfield County Clean Water Act permit.

A September 23, 2003 Internal VDEQ Memorandum described an unannounced compliance inspection that was conducted on September 10, 2003. The Memorandum noted the site was turned over to Kroger, which planned to open a grocery store at the site in October 2003. The Memorandum requested the Office of Waste Programs to deactivate the VAD identification number, as Rehrig no longer occupied the site.

Photographs 1 through 5 found in Appendix A of this report show the condition of the site at the time of the September 29, 2006 Site Visit.

5.1 Area Geology and Hydrogeology

Geology

According to the 1989 Preliminary Assessment Report, the Rehrig facility is located in the Fall Zone between the Piedmont and Coastal Plain Physiographic Providences. This is a transitional zone up to 10 miles wide where thin, younger Coastal Plain sediments begin to cover the Older Piedmont rocks.

The basement rock for this area is the Petersburg granite. In the Fall Zone, the Petersburg is overlain by Miocene marine transgressive sediments or younger Tertiary-Quaternary regressive sediments or both. Transgressive sediments are described as drab-gray, bluish-gray, and greenish-gray silts, clays, and silty clays commonly well consolidated with some plant fragments

and occasional shell beds. Regressive sediments are light to bright colored oxidized sediments, mainly sands and gravels with some clay.

Several borings (hand auger and test borings) were advanced in 1993 as part of an Environmental Site Assessment investigation. The following table summarizes the site-specific geology observed.

Boring	Depth	Soil Description
B-1	0 to 6 feet	Red-brown fat clay with sand fill, trace gravel, and brown fine to coarse poorly graded sand fill
	6 to 15 feet	Brown fine to medium sandy lean clay
B-2	0 to 6 feet	Brown and black fine to medium sandy lean clay fill, gravel, and asphalt
	6 to 15 feet	Brown, red, and gray fine sandy lean clay
HA-1	0 to 3.5 feet	Brown and red fine to coarse sandy lean clay fill with trace gravel
HA-2	0 to 1.5 feet	Gray crushed stone fill beneath concrete and red brown lean clay with trace sand
HA-3	0 to 1.5 feet	Gray crushed stone fill beneath concrete and yellow to brown fine to medium poorly graded sand, probable fill
HA-4	0 to 1 foot	Gray crushed stone fill beneath concrete and stone fill. Auger terminated due to second concrete slab
HA-5	0 to 1 foot	Brown lean clay with sand and red-brown fine to medium clayey sand
HA-6	0 to 1.2 feet	Red brown fine to medium clayey sand

Hydrology and Hydrogeology

Groundwater quality within the Fall Zone is generally good except for some areas where high iron concentration poses a problem. According to the 1989 Preliminary Assessment, pumping rates up to 10 gallons per minute (gpm) are common with rates of 100 gpm possible. Most wells in the Fall Zone are drilled through the thin Coastal Plain deposits and are completed in the underlying bedrock.

No groundwater monitoring wells were known to be installed at the site; therefore site-specific information is not available.

5.2 Wastes Generated at the Facility

The following waste streams were historically generated by Rehrig according to a November 17, 1998 VDEQ Survey Sheet for Inspection of Hazardous Waste Facilities:

- Sludge from nickel plating process (F006, D007)
- Waste acid (D002, D007)
- Waste alkaline (D002, D007, D008)

According to a 1997 Consent Order, the waste generated was stabilized waste sludge from the nickel trichrome plating process.

Muriatic acid with a pH of 1 to 2 (excluded from waste regulations) was treated neutralized and discharged to the sanitary sewer system under the facility's Pretreatment Permit issued by the City of Richmond.

The property is now the site of a Krogers grocery store and several small retail shops and generates no hazardous waste.

6.0 DESCRIPTION OF AOCS AND SWMUS

6.1 SWMU #1 - Bays A1, A2, A3, A4, A5, A6, B1, B2, B3, B4, B5, B6, B7, and B8

This unit received wastewater from the chrome plating operation and removed metals from the nickel chrome plating operation (pretreatment). The bays were located on the northwestern side of the building. The following summarizes the sizes and first dates of use of these bays:

Bay Number	First Date of Use	Size (square feet)
A1	July 1, 1979 - February 1, 1980	None provided
A2	February 1, 1980 - May 1, 1983	9,335
A3	May 1, 1982 - July 1, 1983	9,335
A4	July 1, 1983	8,840
A5	July 1, 1983	8,755
A6	July 1, 1983	8,840
B1	July 1, 1979 - February 1, 1980	Total of 41,444
B2	July 1, 1979 - February 1, 1980	
B3	July 1, 1979 - February 1, 1980	
B4	July 1, 1983	8,431
B5	July 1, 1983	8,431
B6	July 1, 1983	8,431
B7	July 1, 1983	8,323
B8	July 1, 1983	8,323

According to a letter from Rehrig to USEPA Region III dated May 20, 1986, this SWMU was a specially lined pit. The water was pumped from this unit through a series of lined tanks. The last tank had a baffle for collecting sludge. Following the last tank, water was then pumped through a filter press. The capacity of this unit was 30 gpm. The annual quantity of wastewater processed by this unit was estimated to be 650,000 (4.86 million gallons) cubic feet per year.

Pro Chem representatives indicated during the November 29, 2006 site visit that this SWMU was actually a group of fiberglass aboveground tanks/baths. The bay numbers are related to the plating lines from which the baths received liquid. A January 31, 1997 letter from CTI Consultants to Rehrig noted that five fiberglass tanks were visually examined and found to be in satisfactory condition an that they could be put into immediate service. A letter from VDEQ to Rehrig dated January 14, 1997 indicated that an epoxy-coated berm and leak detection systems were to be installed for these tanks. It is unclear if these five tanks were new at the time of the correspondence, or if they are included in the group of previously used tanks. A November 17, 1998 Hazardous Waste Management Compliance Inspection Report noted that these five tanks were of the following capacities:

- Two 3,300-gallon
- One 4,200-gallon
- Two 5,000-gallon

No closure plan was found in USEPA or VDEQ files, however, a letter from VDEQ to Rehrig dated March 24, 2989 indicated that a closure plan was submitted to the Virginia Department of Waste Management on February 28, 1989. The Virginia Department of Waste Management conducted a compliance inspection of the facility's operations on November 1, 1990 according to a November 6, 1990 letter to Rehrig. This letter provided the VDEQ's approval of closure of the hazardous waste management facility under Interim Status and documented that the facility was "closed" in accordance with the approved closure plan and the "certifications" of closure provided by Rehrig. This letter did not list specific SWMUs covered by this closure plan or the November 6, 1990 letter.

No evidence of a spill or release was found at the site visit or in the files reviewed at the VDEQ or USEPA Region III offices.

6.2 SWMU #2 - #1 and #2 Filter Press

Rehrig operated two Filter Press units, each with a capacity of 1,500 pounds. According to files reviewed by TtEC, this equipment was active as of 1996. Pro Chem representatives reported during the November 29, 2006 site visit, that these filter presses were cleaned, dismantled, and sold for scrap.

No closure plan was found in USEPA or VDEQ files, however, a letter from VDEQ to Rehrig dated March 24, 2989 indicated that a closure plan was submitted to the Virginia Department of Waste Management on February 28, 1989. The Virginia Department of Waste Management conducted a compliance inspection of the facility's operations on November 1, 1990 according to a November 6, 1990 letter to Rehrig. This letter provided the VDEQ's approval of closure of the hazardous waste management facility under Interim Status and documented that the facility was "closed" in accordance with the approved closure plan and the "certifications" of closure provided by Rehrig. This letter did not list specific SWMUs covered by this closure plan or the November 6, 1990 letter.

No evidence of a spill or release was found at the site visit or in the files reviewed at the VDEQ or USEPA Region III offices.

6.3 SWMU #3 - Two Less Than 90-Day Accumulation Area

Rehrig operated two less than 90-day accumulation areas that held the waste from the two Filter Press units (SWMU #2). According to files reviewed by TtEC, these units were active in 1996. The 1993 Environmental Site Assessment Update Report noted that there was only one hazardous waste storage area. No additional information was provided.

No closure plan was found in USEPA or VDEQ files, however, a letter from VDEQ to Rehrig dated March 24, 2989 indicated that a closure plan was submitted to the Virginia Department of Waste Management on February 28, 1989. The Virginia Department of Waste Management conducted a compliance inspection of the facility's operations on November 1, 1990 according to a November 6, 1990 letter to Rehrig. This letter provided the VDEQ's approval of closure of the hazardous waste management facility under Interim Status and documented that the facility was "closed" in accordance with the approved closure plan and the "certifications" of closure provided by Rehrig. This letter did not list specific SWMUs covered by this closure plan or the November 6, 1990 letter.

No evidence of a spill or release was found at the site visit or in the files reviewed at the VDEQ or USEPA Region III offices.

6.4 SWMU #4 - Drum Storage Area

According to the 1989 Preliminary Assessment, this area was located near the loading dock. It was a concrete pad where full drums of dried nickel plating sludge, filter press cake, and metal chips scraped off metal parts holders were stored until they were removed from the site for disposal at a Treatment, Storage, Disposal Facility (TSDF). The concrete pad was fenced and secured with a lock at the time of the 1989 Preliminary Assessment. Approximately 80 drums were observed in this area during a March 16, 1989 RCRA inspection, which served as the last inspection prior the 1989 Preliminary Assessment being issued.

The 1989 Preliminary Assessment Report indicated that a closure plan was submitted to the Department of Waste Management. A letter from Rehrig to the Department of Waste Management dated October 19, 1990 provided certification statements for the closure of a containment slab. TtEC assumes that this letter refers to SWMU #4. Neither USEPA nor VDEQ files contained a closure plan for this unit.

No evidence of a spill or release was found at the site visit or in the files reviewed at the VDEQ or USEPA Region III offices.

6.5 SWMU #5 - Nickel Plating Sludge Drying Drum

The 1989 Preliminary Assessment Report identified this unit as SWMU #1, which was located next to the nickel plating tank. As the nickel dropped out of the plating solution, it accumulated

on the bottom the tank as sludge. Once per week, the sludge was removed and placed in this drum to dry.

No closure plan was found in USEPA or VDEQ files, however, a letter from VDEQ to Rehrig dated March 24, 2989 indicated that a closure plan was submitted to the Virginia Department of Waste Management on February 28, 1989. The Virginia Department of Waste Management conducted a compliance inspection of the facility's operations on November 1, 1990 according to a November 6, 1990 letter to Rehrig. This letter provided the VDEQ's approval of closure of the hazardous waste management facility under Interim Status and documented that the facility was "closed" in accordance with the approved closure plan and the "certifications" of closure provided by Rehrig. This letter did not list specific SWMUs covered by this closure plan or the November 6, 1990 letter.

No evidence of a spill or release was found at the site visit or in the files reviewed at the VDEQ or USEPA Region III offices.

6.6 SWMU #6 - Filter Press Cake Bin

This SWMU is listed as SWMU #2 in the 1989 Preliminary Assessment Report. The Filter Press Cake Bin was located underneath the filter press at the end of the wastewater treatment process. It was a catch basin for the pressed filter cake that was generated by the filter press according to the 1989 Preliminary Assessment Report.

When the filter press reached its capacity, the filter press cake was removed by scraping it off the filters into a catch basin directly beneath the press. The cake was then stored in SWMU #3 prior to disposal.

No closure plan was found in USEPA or VDEQ files, however, a letter from VDEQ to Rehrig dated March 24, 2989 indicated that a closure plan was submitted to the Virginia Department of Waste Management on February 28, 1989. The Virginia Department of Waste Management conducted a compliance inspection of the facility's operations on November 1, 1990 according to a November 6, 1990 letter to Rehrig. This letter provided the VDEQ's approval of closure of the hazardous waste management facility under Interim Status and documented that the facility was "closed" in accordance with the approved closure plan and the "certifications" of closure provided by Rehrig. This letter did not list specific SWMUs covered by this closure plan or the November 6, 1990 letter.

No evidence of a spill or release was found at the site visit or in the files reviewed at the VDEQ or USEPA Region III offices.

6.7 SWMU #7 - 55-Gallon Storage Drum

According to the 1989 Preliminary Assessment Report, this SWMU (labeled as SWMU #3 in the 1989 Preliminary Assessment Report) was located near the filter press catch basin and contained nickel plating sludge, filter press cake, and any metal chips that were scraped off the metal parts holder. Layers of an absorbent material were also placed in this drum to prevent leaks.

No closure plan was found in USEPA or VDEQ files, however, a letter from VDEQ to Rehrig dated March 24, 2989 indicated that a closure plan was submitted to the Virginia Department of Waste Management on February 28, 1989. The Virginia Department of Waste Management conducted a compliance inspection of the facility's operations on November 1, 1990 according to a November 6, 1990 letter to Rehrig. This letter provided the VDEQ's approval of closure of the hazardous waste management facility under Interim Status and documented that the facility was "closed" in accordance with the approved closure plan and the "certifications" of closure provided by Rehrig. This letter did not list specific SWMUs covered by this closure plan or the November 6, 1990 letter.

No evidence of a spill or release was found at the site visit or in the files reviewed at the VDEQ or USEPA Region III offices.

6.8 SWMU #8 - Wastewater Treatment System

The wastewater from the plating process underwent four stages of treatment. In the first stage, wastewater pH was adjusted with lime to between 8.5 and 10. In the second stage, a flocculent was added, and in the third stage, a coagulating agent was added. The treated wastewater was then sent to a settling tank (partially below ground based on 1993 Environmental Site Assessment Update Report); it was then processed through a filter press to remove solids. Once treatment was complete, the water was discharged to the POTW through the City of Richmond sewer system.

No closure plan was found in USEPA or VDEQ files, however, a letter from VDEQ to Rehrig dated March 24, 2989 indicated that a closure plan was submitted to the Virginia Department of Waste Management on February 28, 1989. The Virginia Department of Waste Management conducted a compliance inspection of the facility's operations on November 1, 1990 according to a November 6, 1990 letter to Rehrig. This letter provided the VDEQ's approval of closure of the hazardous waste management facility under Interim Status and documented that the facility was "closed" in accordance with the approved closure plan and the "certifications" of closure provided by Rehrig. This letter did not list specific SWMUs covered by this closure plan or the November 6, 1990 letter.

No evidence of a spill or release was found at the site visit or in the files reviewed at the VDEQ or USEPA Region III offices.

6.9 SWMU #9 - Interim Status Storage Unit

On November 9, 1990, the Virginia Department of Waste Management provided the Rehrig facility with a copy of an October 15, 1990 Hazardous Waste Compliance Inspection. The Inspection Report indicated that the facility was in the process of closing an Interim Status Storage Unit. It is not clear if this SWMU is one of those described above.

No closure plan was found in USEPA or VDEQ files, however, a letter from VDEQ to Rehrig dated March 24, 2989 indicated that a closure plan was submitted to the Virginia Department of

Waste Management on February 28, 1989. The Virginia Department of Waste Management conducted a compliance inspection of the facility's operations on November 1, 1990 according to a November 6, 1990 letter to Rehrig. This letter provided the VDEQ's approval of closure of the hazardous waste management facility under Interim Status and documented that the facility was "closed" in accordance with the approved closure plan and the "certifications" of closure provided by Rehrig. This letter did not list specific SWMUs covered by this closure plan or the November 6, 1990 letter.

No evidence of a spill or release was found at the site visit or in the files reviewed at the VDEQ or USEPA Region III offices.

6.10 AOC #1 - Hydraulic Oil-Contaminated Soil

An April 26, 1993 Environmental Site Assessment Report prepared for Rehrig indicated that soil contaminated with hydraulic oil was removed in 1991. Approximately 2,336 cubic feet of soil was removed for offsite disposal. This contaminated soil was discovered during excavation activities taking place for an injection molding machine. Rehrig suspected that this contamination occurred prior to its occupation of the site. This incident was closed to the satisfaction of the State Water Control Board and the Richmond Fire Department.

No additional information was found in VDEQ or USEPA Region III files, or provided by facility representatives.

6.11 AOC #2 - Sodium Hydrosulfite Reaction

According to the 1993 Environmental Site Assessment Report, a chemical reaction occurred in December 1992. Sodium hydrosulfite, which was used in the wastewater treatment process (conducted indoors), was released to the concrete floor in the wastewater treatment process area. The material was swept up and placed in a 55-gallon drum. The drum contained some water, which reacted with the sodium hydrosulfite, resulting in smoke and fumes. No evidence was found in files reviewed indicating that the smoke or fumes left the building or site. The event was isolated to a 55-gallon drum trash container indoors. Oil dry was placed in the drum to stop the reaction. This incident was closed to the satisfaction of the State Water Control Board and the Richmond Fire Department.

No additional information was found in VDEQ or USEPA Region III files, or provided by facility representatives.

6.12 AOC #3: - Former Diesel Fuel Underground Storage Tank

A 1,000-gallon diesel fuel UST was removed from the site in April 1989 according to the 1993 Environmental Site Assessment Report. Soil samples collected during the removal activities contained low levels of petroleum hydrocarbon contamination. The levels were reported to be below the reportable level of 100 milligrams per kilograms (mg/kg) set by the State Water Control Board. No formal closure letter was issued by the State Water Control Board.

No additional information was found in VDEQ or USEPA Region III files, or provided by facility representatives.

7.0 DESCRIPTION OF EXPOSURE PATHWAYS FOR ALL RELEASES OR POTENTIAL RELEASES

7.1 Air

No information was found in USEPA or VDEQ files regarding air permits the facility historically maintained. No recorded or documented releases of contaminants to the environment nor odors at the Rehrig facility were identified in the documents reviewed, were confirmed by Pro Chem staff, or were noted during the site visit, except for the Sodium Hydrosulfite Reaction, which occurred in a drum indoors in December 1992. No evidence of complaints from residents or other surrounding properties was found in VDEQ or USEPA Region III offices. No evidence was found in files reviewed indicating that the smoke or fumes left the building or site. There is no hazard for a release of a hazardous waste to air as the site is now used for retail purposes.

The site is located in an urban commercial, industrial, and residential area. The closest residence is located approximately 500 feet away across Bowe Street to the northeast on West Leigh Street (Bowe Street bounds the Rehrig site to the southeast).

7.2 Surface Water

The nearest surface water body is the James River, which is located approximately 1.6 miles south of the former Rehrig facility. According to the 1989 Preliminary Assessment Report, all plating tanks had concrete containment systems. Runoff was diverted to the City of Richmond's POTW via stormwater/sewer system; therefore it could not reach the James River.

No evidence of releases to the James River was found in files reviewed at VDEQ or USEPA Region III offices.

7.3 Groundwater

According to the 1989 Preliminary Assessment Report, all plating tanks had concrete containment systems and that only runoff from the roof and sidewalks could reach groundwater via seepage; no processes took place outdoors. No groundwater wells were located within a three-mile radius of the site at the time of the 1989 Preliminary Assessment Report. No evidence of releases to groundwater was found in files reviewed at VDEQ or USEPA Region III offices.

No groundwater monitoring wells were known to be installed at the site, nor was groundwater encountered in soil borings (up to depth of 15 feet) or soil vapor points (no depth provided) advanced in 1993. Therefore, site-specific groundwater quality is not known.

7.4 Soil

Areas around manufacturing units were reported to have been located on concrete with containment systems.

Soil samples were collected from the plating operation and analyzed for pH, sulfates, total chromium, hexavalent chromium, and nickel in 1989. According the 1989 Phase II Study (summarized in the 1993 Environmental Site Assessment Update Report; no evidence of significant leakage from the plating area was found. The 1993 Environmental Site Assessment Update Report indicated that low pH and elevated sulfate concentrations may have been the result of a minor sulfuric acid spill. No soil remediation took place as a result of the 1989 investigation.

Five soil vapor samples were collected from the vicinity of the UST in 1989; no soil samples were collected. Photoionization device (PID) values ranged from 0 to 2.6 parts per million (ppm). The 1989 Phase II Study found no evidence of hydrocarbons in the pit surrounding the UST.

The 1993 Environmental Site Assessment Update Report noted that hydraulic oil-contaminated soil was removed from the site. Rehrig suspected that this contamination occurred prior to its occupation of the site. This incident was closed to the satisfaction of the State Water Control Board and the Richmond Fire Department.

Soil samples collected in 1993 contained nickel concentrations ranging from 3.9 to 66.5 ppm and chromium concentrations ranging from 13.5 to 116.3 ppm. The 1993 Environmental Site Assessment Update Report indicated that these constituents could be naturally occurring. One soil sample collected from the vicinity of the diesel fuel UST contained 39 ppm of Total Petroleum Hydrocarbons (TPH), which was less than the reporting value of 100 ppm (per the State Water Board). No soil remediation took place as a result of the 1993 investigation.

8.0 EXPOSURE PATHWAY CONTROLS AND RELEASE CONTROLS INSTITUTED AT THE FACILITY

8.1 Site Access

The site is now occupied by a Krogers grocery store and small retail shops. Access to the site is provided via several public drive ways into the parking lot.

8.2 Air

It is not clear if Rehrig maintained air permits for its operations. Raw hazardous chemicals and wastes are no longer stored at the facility; therefore there is no potential for a release to the atmosphere.

8.3 Surface Water

No information found in VDEQ or USEPA files indicate that the site operated under a Virginia Pollution Discharge Elimination System (VPDES) permit. Stormwater was discharged from the site to the City of Richmond's stormwater sewer system. The facility maintained a wastewater Pretreatment Permit, which allowed the discharge of wastewater to the City's sanitary sewer system. Raw hazardous chemicals and wastes are no longer stored at the facility; therefore there is no potential for a release to the surface water.

8.4 Groundwater

Potable water is supplied by the City of Richmond to the site and surrounding area (within a three miles radius according to the 1989 Preliminary Assessment Report). The source of the water is the James River; the intake was approximately three miles upstream and southwest of the site.

TtEC obtained a copy of City of Richmond Ordinance Division 4 – Water Service Connections, Pipes, and Meters – Section 106-336 – Duties of owners and tenants (provided in Appendix C of this report). This Ordinance indicates that all newly constructed or existing buildings shall be connected to the public water service system. It indicates that owners who have used another water supply system (for example, a well) that was installed and used prior to January 1, 1970 are not be required to have a public water connection if it can be proven that the alternative water supply is not detrimental to public health and safety, as approved by the Richmond City Health District. The ordinance also states that a property owner is able to drill a new potable well provided the Richmond City Health District approves the well and water quality.

TtEC contacted the Richmond City Health District for clarification of this ordinance. An environmental inspector indicated that 98 percent of the City of Richmond is served by municipal water (the vicinity of the site is included in this 98 percent) and that the District does not approve wells for potable use. The inspector reported that if there are any wells in the vicinity of the site, they are for irrigation purposes only.

The 1989 Preliminary Assessment Report indicated that groundwater contamination was not expected due to the plating tanks having concrete containment systems and the fact that all processes took place indoors.

8.5 Soil

The former Rehrig facility was constructed with concrete floors and containment systems. If a release occurred, the material was removed from the containment structures and treated in the wastewater treatment system.

9.0 FOLLOW-UP ACTION ITEMS

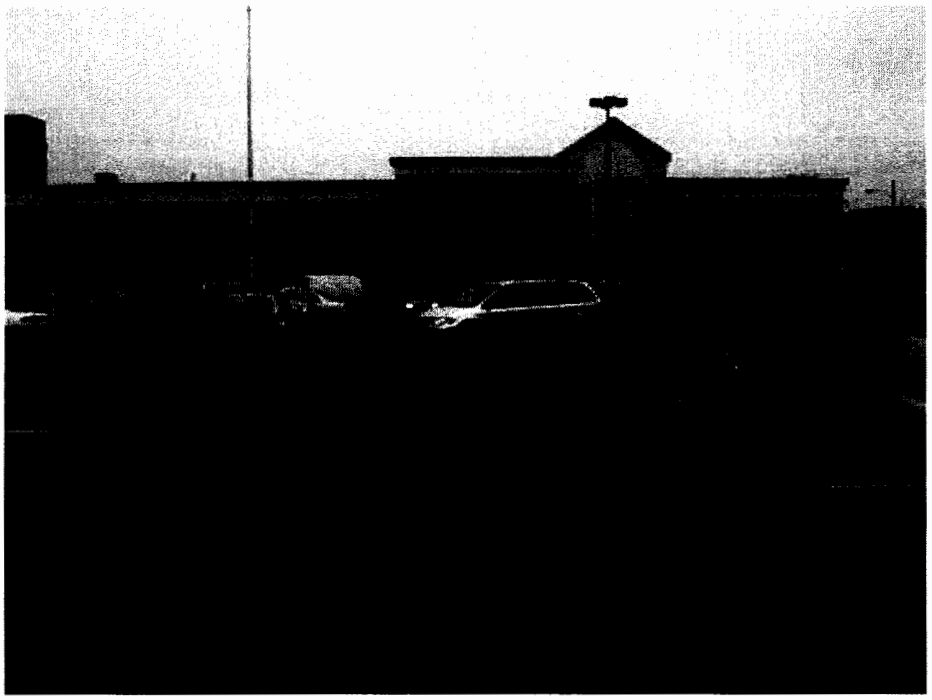
USEPA Region III will decide if additional information or sampling at the facility is required to determine whether the environmental indicators have been met or if corrective action is required by the facility.

The facility will determine if they would like to pursue RCRA Corrective Action utilizing the Facility Lead Program.

APPENDIX A

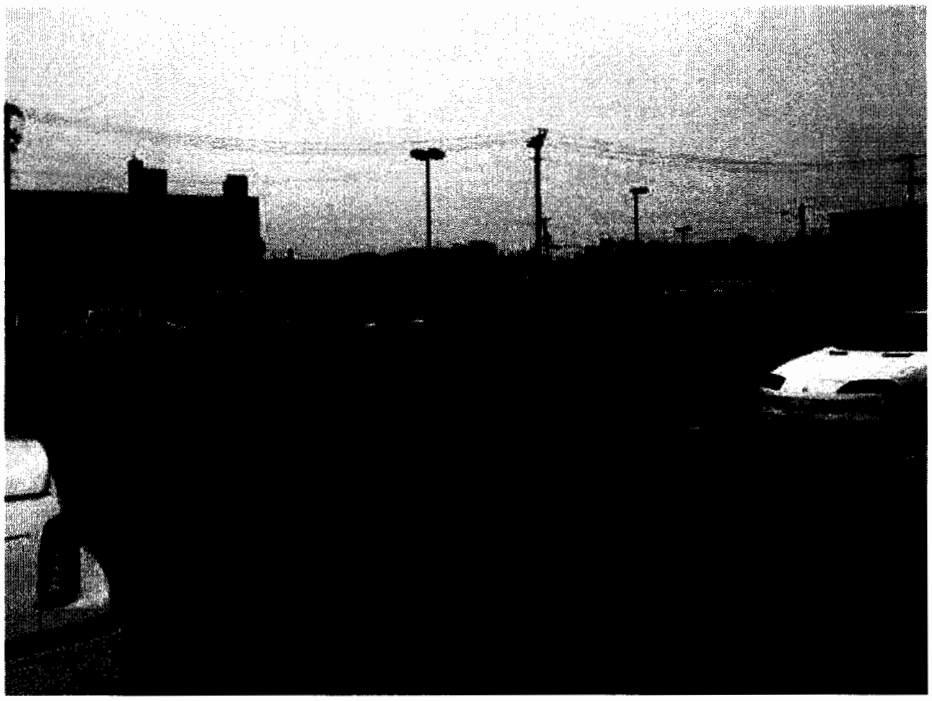
SITE VISIT PHOTOGRAPHS

Photograph 1
View of retail stores on the former Rehrig property.

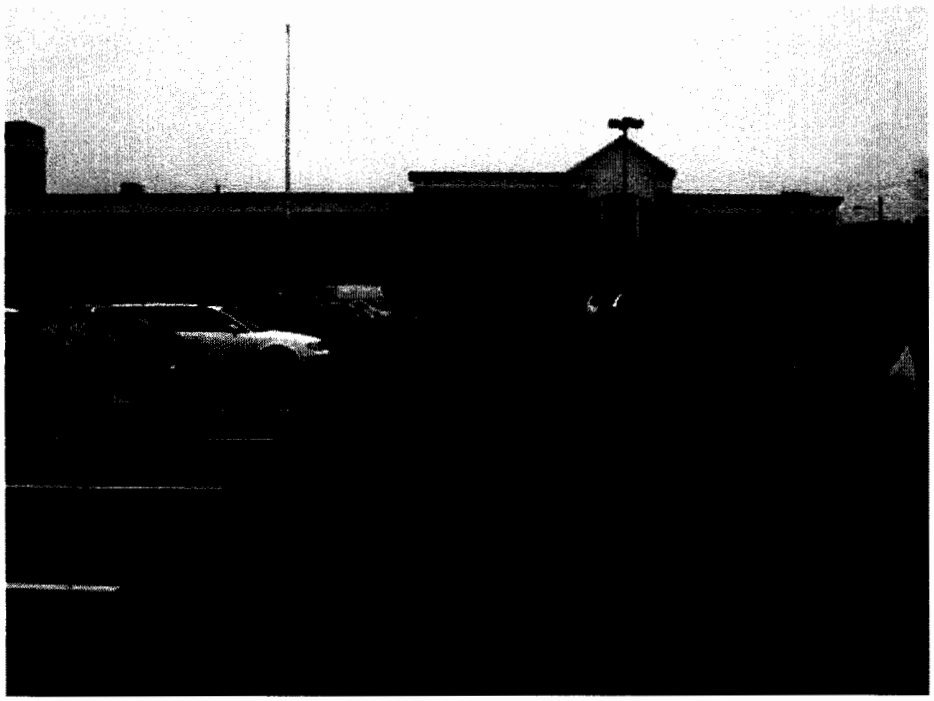


Photograph 2
View of Kroger Grocery Store on the former Rehrig property.

Photograph 3
View of adjacent property.



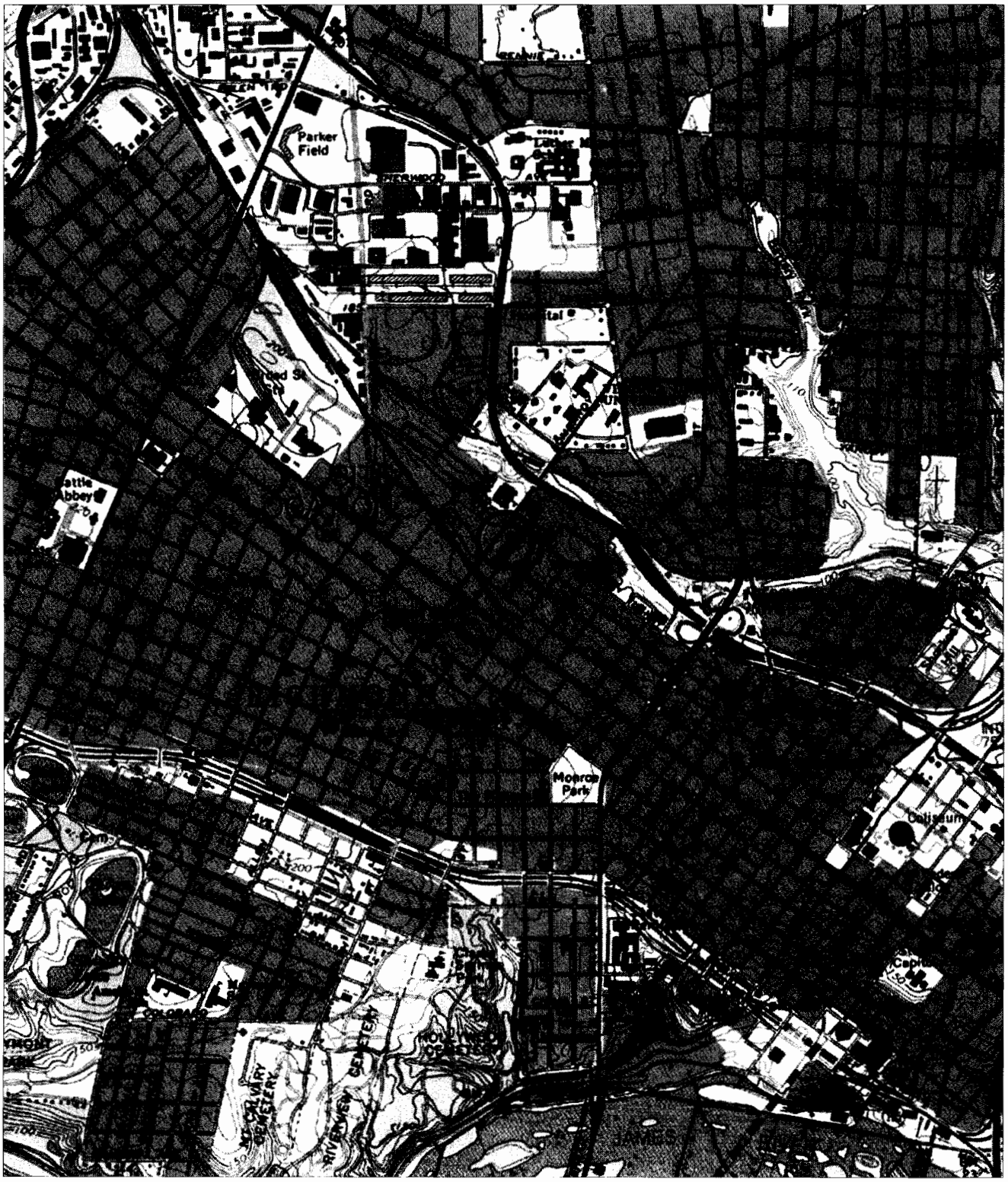
Photograph 4
View of retail stores on the former Rehrig property.



Photograph 5
View of Kroger Grocery Store on the former Rehrig property.

APPENDIX B

SITE LOCATION AND LAYOUT MAPS



VIRGINIA
Quadrangle Location Map

0 2000 4000 Feet

N

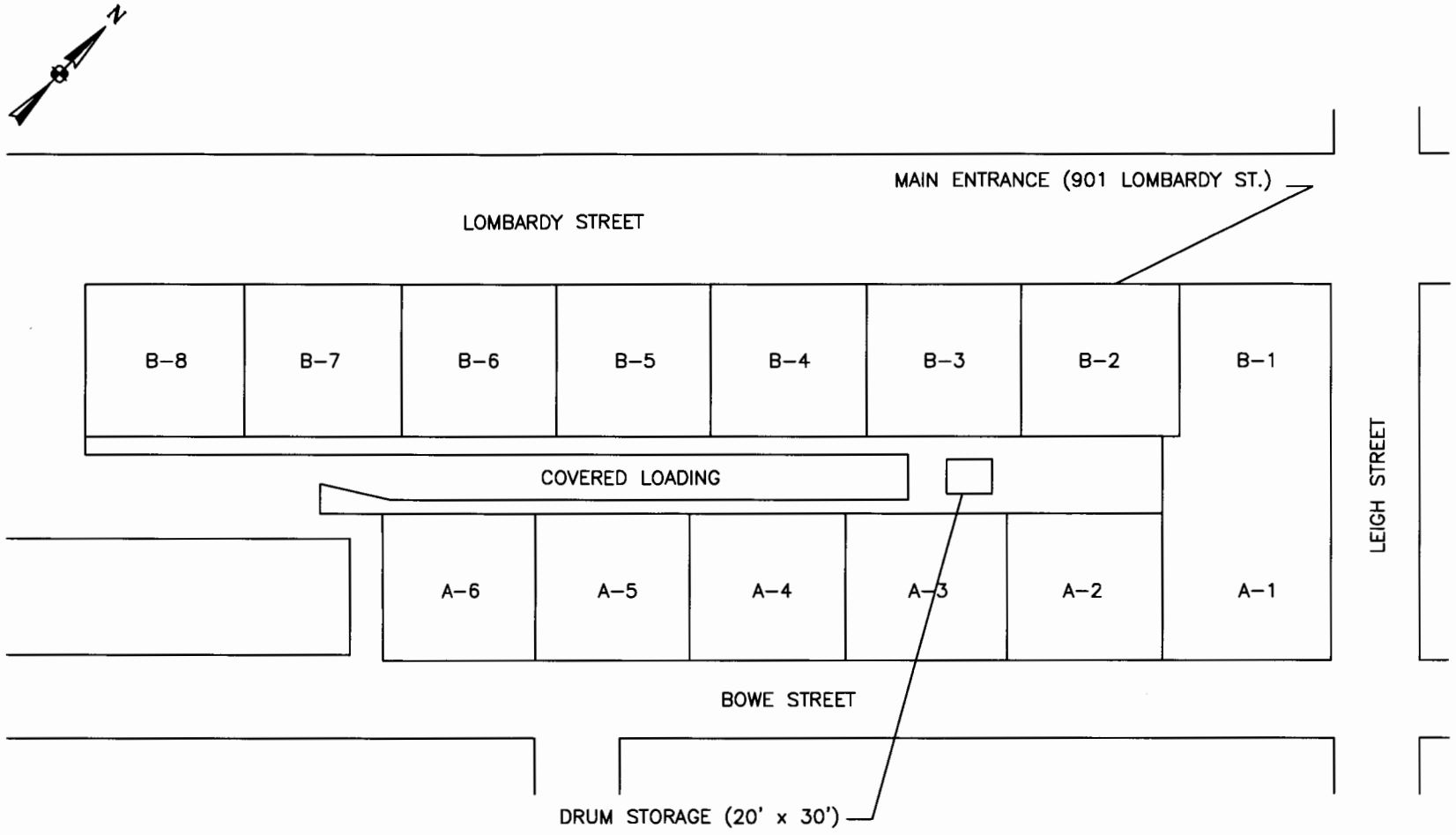
SOURCE: U.S.G.S. TOPOGRAPHIC MAP (7.5 Minute)
RICHMOND, VIRGINIA.

United States Environmental Protection Agency

REHRIG
Richmond, Virginia

FIGURE 1
SITE LOCATION MAP

TETRA TECH EC, INC.



LEGEND:

NOT TO SCALE

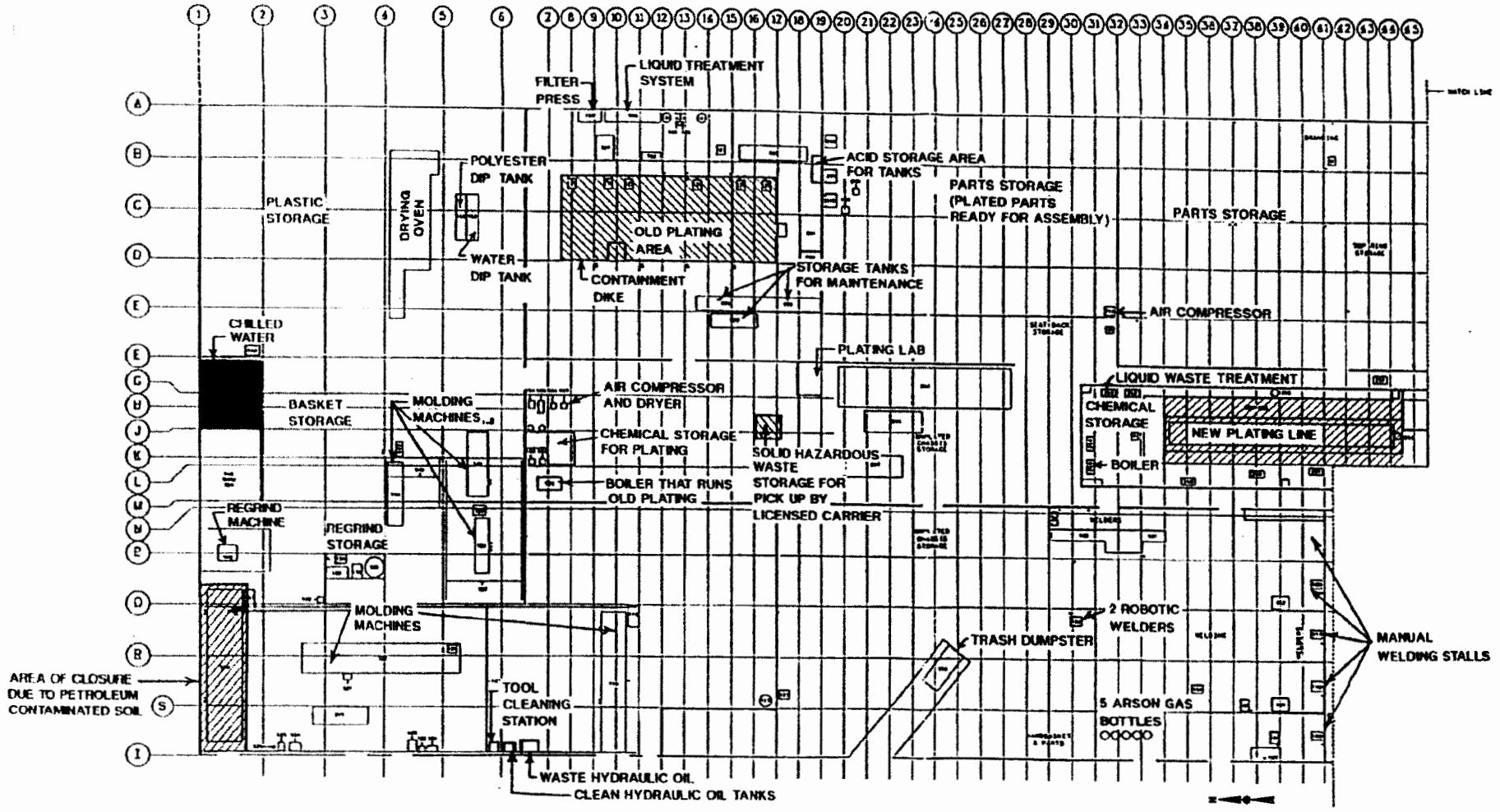
SOURCE: EPA PERMIT APPLICATION, 11/18/80.

United States Environmental Protection Agency

REHRIG
Richmond, Virginia

FIGURE 2
SITE LAYOUT

TETRA TECH EC, INC.



NOT TO SCALE

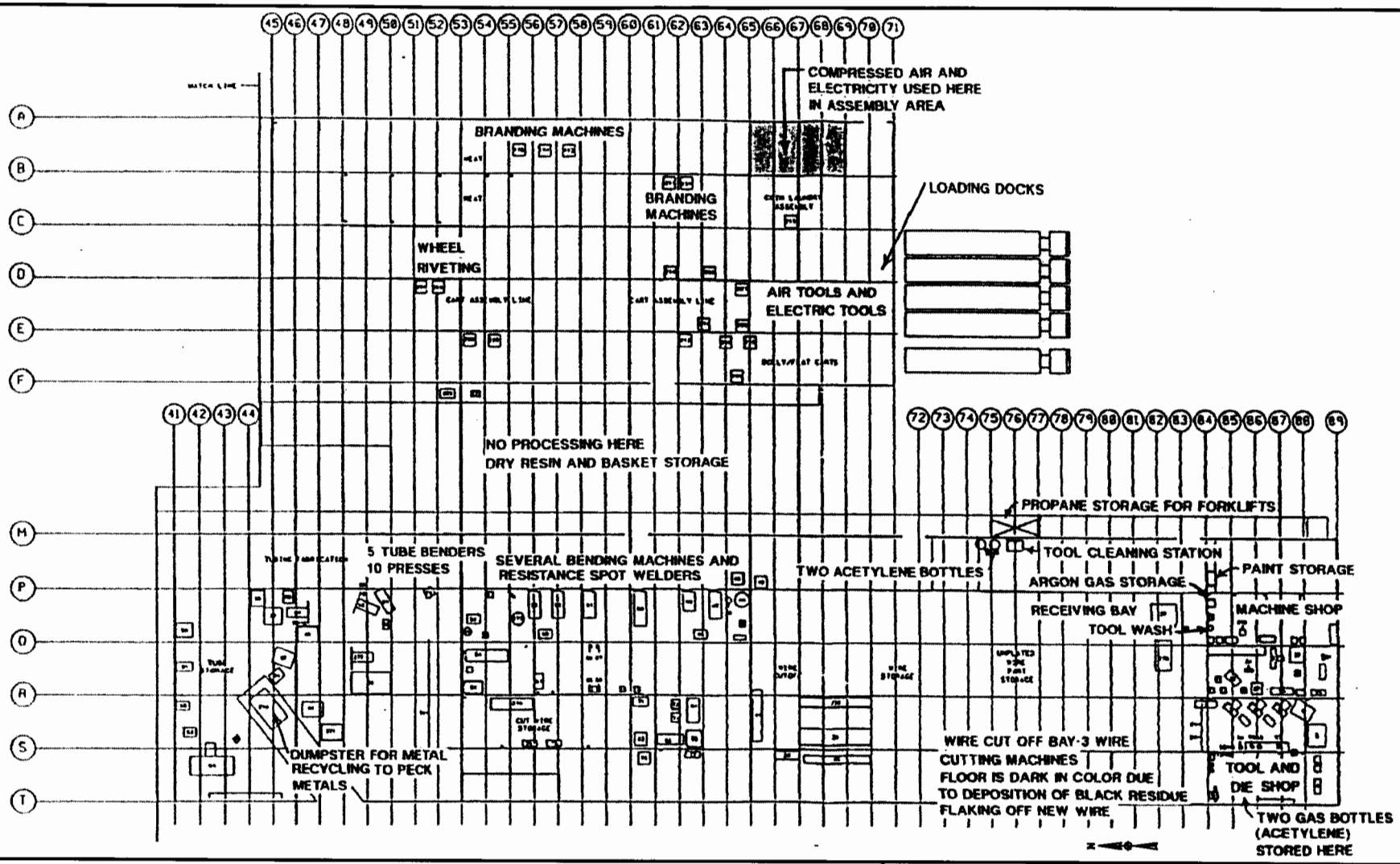
SOURCE: 1993 Environmental Site Assessment Update, Schnabel Enviromental Services

United States Environmental Protection Agency

REHRIG
Richmond, Virginia

FIGURE 3
BUILDING LAYOUT (1 OF 2)

TETRA TECH EC, INC.



NOT TO SCALE

SOURCE: 1993 Environmental Site Assessment Update, Schnabel Enviromental Services

United States Environmental Protection Agency

REHRIG
Richmond, Virginia

FIGURE 4
BUILDING LAYOUT (2 OF 2)

TETRA TECH EC, INC.

APPENDIX C

INVENTORY OF DOCUMENTATION AND REFERENCE DOCUMENTS

Inventory of Documentation

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November 14, 1980	**Notification of Hazardous Waste Activity** Rehrig International gives written notification to the USEPA of Hazardous Waste Activity.
November 19, 1980	**USEPA forms completed by Rehrig International** General Information Form and Hazardous Waste Permit Application
January 21, 1981	**Letter from USEPA to Rehrig International** Acknowledgement by the USEPA that Rehrig International has applied for a hazardous waste permit.
August 5, 1981	**Letter from USEPA to H.B.P. Associates** Processing of the hazardous waste permit is complete.
October 15, 1982	**RCRA Inspection** On September 21, 1982 the Virginia State Health Department, Division of Solid and Hazardous Waste Management conducted an inspection that resulted in some violations.
April 21, 1986	**Letter from Rehrig International to USEPA** Correspondence concurring extension to provide information.
May 20, 1986	**Letter from Rehrig International to USEPA** Submittal of topographic map as well as history of the building, unit's function, and description of solid waste.
July 1, 1986	**Letter and Enclosure from Commonwealth of Virginia Department of Waste Management to Rehrig International** Inspection checklists
July 26, 1986	**Letter from Commonwealth of Virginia Department of Health to Rehrig International** Compliance Order outlining findings, orders and stipulations.
July 30, 1986	**RCRA Inspection** An RCRA inspection dated June 25, 1986 by Virginia's Department of Waste Management found areas of non-compliance.
August 19, 1986	**Internal Memo – US EPA Region III** Internal memo stating that action is going to be taken regarding violations found during inspections.

October 8, 1986	**RCRA Inspection** A re-inspection of the Rehrig facility on September 24, 1986 had made great improvements, but was still not in total compliance.
October 16, 1986	**Internal Memo – US EPA Region III** Internal memo stating that action is going to be taken regarding violations found during inspections.
June 2, 1988	**RCRA Inspection** After a RCRA inspection on December 8, 1987 the Rehrig facility was found to be in compliance with the Virginia Hazardous Waste Management Regulations.
March 24, 1989	**Letter from Virginia Department of Waste Management to Rehrig International** The closure plan for the Rehrig facility was received by the Virginia Department of Waste Management on February 28, 1989.
August 2, 1989	**Preliminary Assessment of Rehrig International** Preliminary Assessment of Rehrig International, prepared by Commonwealth of Virginia, Department of Waste Management.
October 19, 1990	**Letter from Rehrig International to Virginia Department of Waste Management** Certification statements and support documentation indicating clean closure of the facilities containment area has been achieved.
November 6, 1990	**Letter from Virginia Department of Waste Management to Rehrig International** November 1. 1990 the hazardous waste closure has been performed in accordance with the approved closure plan.
November 9, 1990	**RCRA Inspection** On October 15, 1990 an inspection showed that the facility was in compliance with the Virginia Hazardous Waste Management Regulations.
April 1993	**Report from Schnabel Environmental Services** Rehrig International ESA Update
May 21, 1993	**Letter from Virginia Department of Waste Management to Rehrig International** During an inspection on May 13, 1993 the Rehrig facility was found not to be in total compliance with the Virginia Hazardous Waste Management Regulations.

July 16, 1993	**Letter from Virginia Department of Waste Management to Rehrig International** A letter stating corrective actions taken to bring the plant in compliance with waste regulations.
August 8, 1996	**Letter from Virginia Department of Waste Management to Rehrig International** After a RCRA compliance inspection on July 11, 1996 the Rehrig facility was found to be not in compliance with waste management regulations.
September 4, 1996	**Letter from Rehrig International to VDEQ** A letter stating corrective actions taken to bring the plant in compliance with waste regulations.
September 23, 1996	**Letter from CTI Consultants, Inc. to Rehrig International** Proposal for visual inspection of fiberglass tanks.
October 3, 1996	**Letter from Commonwealth of Virginia Department of Environmental Quality to Rehrig International** RCRA Compliance Inspection, Rehrig International
December 17, 1996	**Virginia Waste Management Board Consent Order** Due to violations during RCRA inspections on July 11 and September 16, 1996 the Virginia Department of Environmental Quality, Piedmont Regional Office, has ordered a schedule of compliance as well as a fine.
March 17, 1997	**Letter from Virginia Department of Waste Management to Rehrig International** On March 6, 1997 another follow up inspection was done after much work was completed by Rehrig International to get the plant in compliance with the waste regulations.
May 15, 1998	**Letter from Virginia Department of Environmental Quality to Rehrig International** Letter states that all terms of the January 23, 1997 consent order with VDEQ have been met.
November 25, 1998	**Letter from Virginia Department of Waste Management to Rehrig International** Rehrig International was found, after a Hazardous Waste Management Compliance Inspection on November 17, 1998, to be in compliance with waste regulations.
September 23, 2003	**Internal Memorandum – Virginia Department of Environmental Quality** Internal memo stating that the facility is no longer active at this location.